**Description**

**Challenge Piezo Element** 19.9(<20)mm diameter, Ni alloy basic disc – 3.6kHz resonant frequency, type A1 (=without feedback, super thin type) – Spring terminals, 2.2mm height, type E (=1.5mm diameter gold plated springs, protective decal, visible glue fillet), RoHS compliant

**Specification**

- **Resonant Frequency**: 3,600+/−500Hz
- **Resonant Impedance**: 1,500 Max. ohm
- **Capacitance at 100Hz**: 20,000+/−30% pF at 100Hz 25°C
- **Input Voltage**: 30Vp-p Max., square wave
- **Insulated Resistance**: 5M ohm Min.
- **Storage Temperature**: -20°C to +60°C
- **Termination Description**: 3 Springs, gold plated
- **Construction Materials Case**: No
- **Diaphragm**: Ni Alloy Disc N42 or equal
- **Weight (Typical)**: 0.6 g

**RoHS compliant**

**Reliable Solid State Piezoelectric Technology**

**Dimensions (Unit:mm, Tolerance: +/-0.3mm)**

- **Decal dimensions and placement shown in magenta**
- **Glue Fillet shown in cyan**
- **Transparent Protective Mask**
- **Solder mask area to reduce oxidation and aid in maintaining spring placement during assembly, shown in green**

**Warranty**

*All specifications must be satisfied after the test (Recovery:2 to 4 hrs of recovery under the standard condition after the removal from test chamber).*

**Reliability**

- **High Temperature**: no function at +70+/−2°C for 240 hours, function at +60+/−2°C for 240 hours,
- **Low Temperature**: no function at -30+/−2°C for 240 hours, function at -20+/−2°C for 240 hours,
- **Humidity**: +60+/−2°C, 95+/−5%RH, 240 hours
- **Temperature Go up or Drop time is 0.5 hr. 3 hrs per 1 cycle. Total is 5 cycles**

**Shock**

- **10g, 3 times 11ms by half sine wave shock for each 3 mutually perpendicular axis**

**Sock**

- **+30°C±2°C, 90~95%RH, 16hrs followed by +30°C±2°C, 90~95%RH, 8hrs , 5 cycles 10g, 3 times 11ms by half sine wave shock for each 3 mutually perpendicular axis**

**Dimensions**

- **H2.0mm Min. uncompressed; 1.0mm Max. compressed Measured from top of ceramic to top of spring.**

All specifications are subject to change without notice
## Revisions History

<table>
<thead>
<tr>
<th>Version Number</th>
<th>Description</th>
<th>Name</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>020619</td>
<td>Original, CPE-20N-3.6A1-S</td>
<td>Guo Jun</td>
<td>2002-06-19</td>
</tr>
<tr>
<td>040901</td>
<td>Decal is added, CPE-20N-3.6A1-S2.2E</td>
<td>Guo Jun</td>
<td>2004-09-01</td>
</tr>
<tr>
<td>051126</td>
<td>Switched to RoHS complaint, CPE-20N-3.6A1-S2.2ER</td>
<td>Guo Jun</td>
<td>2005-11-26</td>
</tr>
<tr>
<td>SP1.11.009-A3</td>
<td>Update version</td>
<td>Chrissy Deng</td>
<td>2013-01-29</td>
</tr>
</tbody>
</table>